CANADA

66H

66H

LEGEND

APHEBIAN/ HELIKIAN HELIKIAN

- Hd — Diabase and gabbro (Mackenzie dykes)
- A'qm — Quartz monzonite to granite; equigranular to porphyritic, sphene and fluorite bearing
- A'g — Porphyritic granite; white to pink, coarse grained; in part includes white pegmatite intrusions
- A'y,Lp — Mafic syenite, quartz syenite; massive, medium- to coarse-grained; intrudes units (A'gn, A'm,a); Lamprophyre dykes and sills (A'Lp)
- Aqmhg — Metasedimentary rocks (probable equivalents of the Amer Group), fine- to medium-grained and well foliated; q - quartzite; m - quartz-muscovite schist; h - hornfelsed sedimentary rocks; c - carbonate and slate

APHEBIAN

AMER GROUP

- A Afs — Feldspathic sandstone, calcareous arkose, interbedded arkose-siltstone-slate- mudstone; minor greywacke, phyllite, and schist
- A Ams — Mudstone-slate-phyllite; grey to black, in part pyrite and graphite bearing
- A Ac — Carbonate; dolomitic limestone, intercalated with chert; tremolite-phlogopite schist, and wacke
- A Afq — Feldspathic quartzite; cross-bedded and brecciated
- A Aic — Impure clastic rocks; lithic arenite, quartz-muscovite-, quartz-biotite-, quartz-graphite-schists, iron-rich mudstone, siltstone
- A Aq,b — Orthoquartzite; white-, red, and green-quartzite; minor sandstone, quartzite pebble- to cobble-conglomerate, and intercalated micaceous quartzite; b- red-hematitic breccia
- A As — Phyllite, muscovite-schist, and feldspathic sandstone

ARCHEAN / APHEBIAN

- A'v,a — Metavolcanic rocks; intermediate to basic (A'v); minor felsic intrusives and amphibolite (A'a)
- A's — Biotite schist, paragneiss; minor quartzo-feldspathic metasedimentary rocks and gneisses
- A'ub — Mafic to ultramafic rocks; gabbro, peridotite, locally deformed and altered to chlorite schist; in part older than A'g
- A'g — Granite; massive to well foliated, homogeneous, coarse grained; commonly cataclastic at the margins
- A'gd — Granodiorite; medium grained, well foliated and cataclastic; contain inclusions of mafic rocks and quartzite
- A'gmd — Augen (K-feldspar) gneiss; quartz diorite to quartz monzonite composition; massive to well foliated, in part mylonitic
- A'di — Undifferentiated foliated granitoid rocks; quartz diorite to granite composition, porphyritic to aplitic

ARCHEAN

- A q — White orthoquartzite; fine grained and recrystallized, in part contain quartz-pebble conglomerate, quartz-mica schist at the base, and intercalated with black-phyllitic schist horizons
- A gk — Greywacke, chlorite schist, iron formation, and minor laminated chert and carbonate
- A u — Ultramafic rocks: basaltic and peridotitic komatiites, spinifex textured flows; minor felsic metavolcanic and layered volcanogenic sedimentary rocks towards the top of the sequence
- A mv — Metavolcanic rocks: rhyolite porphyry, felsic- to intermediate-tuffs and flows, and shallow intrusive rocks; minor metagabbro sills and dykes
- A m,a — Migmatite, layered and/or banded gneiss, tonalite gneiss, garnet-biotite paragneiss, amphibolite (As)
- A gn — Granulite, garnet-biotite paragneiss, mafic schist, minor amphibolite; intruded by granitoid rocks (Adi, A'g, A'qm, A'y)

NOTE: Barrett et al. (1978) and Patterson (1980, 1981) consider the metavolcanic rocks of Unit A'v to be part of the Amer Group; they consider A'v to occur stratigraphically above the carbonate unit (A Ac).

- × △ ^ — Rock outcrop (observed), probable outcrop, frost heaved rock
- Geological boundary (defined, approximate, assumed/ interpreted from aeromagnetic data)
- Fault (approximate, assumed or interpreted from aeromagnetic data)
- Thrust fault (teeth pointing in the direction of upthrown side; defined, approximate, overturned)
- Bedding, tops known (inclined, overturned), tops unknown
- Foliation, gneissosity (inclined, vertical, dip unknown)
- Trend and plunge of minor fold axis, mineral and/or intersection lineation
- Axial trace of anticline, syncline (arrow indicates direction of plunge)
- Axial trace overturned antiform, synform (arrow indicates direction of plunge)
- Glacial striae (flow direction known, unknown)
- ⊗ K-Ar / U-Pb — Location where age has been determined (m - muscovite; b - biotite; h - hornblende; z - zircon)
- ▲ — Mineral occurrence (uranium)

SCALE 1: 125,000

MILES 5 0 5 10

KILOMETRES 5 0 5 10 15

Geology of the Amer Lake Map Area (NTS 66H)

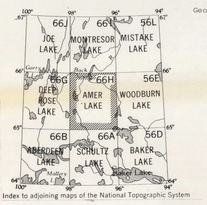
Geological mapping:

W.W. Heywood, S. Tella, and C.R. Tippett (1976)
W.W. Heywood, S. Tella, and I.R. Annesley (1978)
S. Tella (1979)
I.R. Annesley (1981)
K.E. Ashton (1981, 1982)
J.G. Patterson and R.R. Barrett (1979)
R.R. Barrett, P.J. Laporte, and P. Schaub (1978)

Compilation and marginal legend

by

S. Tella and W.W. Heywood



Index to adjoining maps of the National Topographic System

Subject to revision. Notice of revisions or additional geological information would be received and acknowledged by the authors.

550000m.E. 630000m.E.

7310000m.N. 7220000m.N.

AMER LAKE

DISTRICT OF KEEWATIN

NORTHWEST TERRITORIES

Geology of the Amer Lake Map Area (NTS 66H)

Compilation and marginal legend

by

S. Tella and W.W. Heywood

This open file consists of a preliminary geological map of the Amer Lake map area at a scale of 1:125,000. The map is accompanied by a marginal legend, location of uranium showings, data on geochronology, and a list of references. Field mapping, at a scale of 1:250,000 was completed by Heywood, Tippett, Tella, and Annesley during 1976, 1978, and 1979 field seasons. This compilation of bedrock geology incorporates additional data (published and unpublished) from topical studies undertaken in the region by several other workers (Annesley, 1981; Ashton, 1981, 1982; Barrett et al., 1978; Patterson, 1980, 1981; Patterson and Barrett, 1979) at scales ranging from 1:15,000 to 1:50,000. Persons interested in detailed aspects of geology should consult the references supplied. Pertinent references for adjoining map areas are included for an overview of outstanding geological problems.

This open file map shows the distribution of deformed and metamorphosed Archean supracrustal belts and mafic to ultramafic rocks, and Archean/Aphebian granitoid, migmatitic, and gneissic complexes. Deformed and metamorphosed supracrustal rocks of the Amer Group overlie the basement complex unconformably, and are in turn intruded by a younger suite of granite and syenite plutons. The Amer Group is made up of two dominantly clastic sequences separated by transitional lithologies that host stratabound uranium mineralization. Several thrust sheets have been mapped within the lower Amer Group strata. Several cataclastic and mylonitic zones affect both the basement and the cover rocks. Fracture patterns and microstructures associated with the Amer Mylonite Zone suggest at least two periods of movement along the Zone (Tella and Heywood, 1978). The latest movement on the Amer Mylonite Zone and on some of the northwest trending faults post-date the emplacement of late Aphebian-early Helikian granite-syenite plutons.

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